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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|---|-------------|----------------------|-----------------------------|------------------|
| 10/792,245 | 03/03/2004 | Yui Whei Chen-Yang | 250325-1010 | 3978 |
| 24504 | 7590 | 02/09/2007 | EXAMINER | |
| THOMAS, KAYDEN, HORSTEMEYER & RISLEY, LLP | | | WYROZEBSKI LEE, KATARZYNA I | |
| 100 GALLERIA PARKWAY, NW | | | | |
| STE 1750 | | | ART UNIT | PAPER NUMBER |
| ATLANTA, GA 30339-5948 | | | 1714 | |
| SHORTENED STATUTORY PERIOD OF RESPONSE | | MAIL DATE | DELIVERY MODE | |
| 3 MONTHS | | 02/09/2007 | PAPER | |

Please find below and/or attached an Office communication concerning this application or proceeding.

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

| | | | |
|------------------------------|------------------------|---------------------|--|
| Office Action Summary | Application No. | Applicant(s) | |
| | 10/792,245 | CHEN-YANG ET AL. | |
| | Examiner | Art Unit | |
| | Katarzyna Wyrozebski | 1714 | |

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1) Responsive to communication(s) filed on 21 January 2007.

2a) This action is FINAL. 2b) This action is non-final.

3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4) Claim(s) 1-28 is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5) Claim(s) _____ is/are allowed.

6) Claim(s) 1-28 is/are rejected.

7) Claim(s) _____ is/are objected to.

8) Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9) The specification is objected to by the Examiner.

10) The drawing(s) filed on _____ is/are: a) accepted or b) objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11) The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a) All b) Some * c) None of:

1. Certified copies of the priority documents have been received.
2. Certified copies of the priority documents have been received in Application No. _____.
3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

| | |
|---|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____. |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____. | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| | 6) <input type="checkbox"/> Other: _____. |

In view of applicant's response to the First Office action, the response being dated 1/21/2007, following office action is rendered final. Applicant's arguments successfully overcame anticipation rejections, however, obviousness type rejections are still applicable against present claims and are incorporated here by reference.

Claim Rejections - 35 USC § 103

1. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.
2. Claims 1-25 are rejected under 35 U.S.C. 103(a) as being unpatentable over either ARTHUR (US 5,354,611) in view of FUJIWARA (US 2004/0213996).

The discussion of the disclosures of ARTHUR and FUJIWARA from paragraph 7 of the office action dated 10/31/2006 is incorporated here by reference.

Response to Arguments

3. In their response dated 1/21/2007 the applicants argued following:
 - a. The prior art of ARTHUR discloses first coated first particles comprising hollow inorganic microspheres and hydrophobic coating, fluorinated polymer and second coated particles, however it fails to disclose coated porous silica that has pore size of 0.1-50nm.

With respect to the different types of particles that may be present in the disclosure of ARHUR, the applicants claims are open to additional components. Therefore if the prior art teaches two different particles it is still applicable against present claims.

The second particles are, as applicant pointed out, coated with the same coating agent as the first particles, however, the average pore diameter of the particles is about 40 angstroms or 4 nm. It is disclosed that "... it is preferred that the porous inorganic particles comprise porous silica..." right in the same paragraph (col. 3).

Col. 3, beginning line 48 further indicates that the coating is hydrophobic, further listing specific silanes, titanates and the like. It is clearly indicated that the particles are modified to render them compatible with polymeric matrix.

- b. The applicants further argue that the dielectric constant of the porous silica is less than 4.

The prior art of ARTHUR teaches that the porous inorganic particles (col. 3) have dielectric constant of less than 3.5, which is within applicants' range. The table discloses coefficient of thermal expansion of 50 ppm/ $^{\circ}$ C or less. Although the dissipation factor is not

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reported, this property is directly proportional to both dielectric constant and expansion coefficient. The dissipation factor is therefore expected to be within range claimed by the applicants.

c. The examiner exercised improper hindsight rationale when combining the prior art references. The examiner's rational is incomplete and improper. The prior art of FUJIWARA does not add anything to the disclosure of ARTHUR since it does not teach and suggests all the claim limitations therefore are deficient for the purpose of rendering the rejection obvious.

In response to applicant's argument that the examiner's conclusion of obviousness is based upon improper hindsight reasoning, it must be recognized that any judgment on obviousness is in a sense necessarily a reconstruction based upon hindsight reasoning. But so long as it takes into account only knowledge which was within the level of ordinary skill at the time the claimed invention was made, and does not include knowledge gleaned only from the applicant's disclosure, such a reconstruction is proper. See *In re McLaughlin*, 443 F.2d 1392, 170 USPQ 209 (CCPA 1971).

In the instant case, all the limitations of the independent claims were addressed by the prior art of ARTHUR (prior art of HARMER is withdrawn). The disclosure of FUJIWARA was utilized to provide for limitation of **hexagonal shape of silica only**. The applicants indicated that examiner's rationale is improper and incomplete, yet the issue for which the prior art of FUJIWARA was utilized for, was not addressed.

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4. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

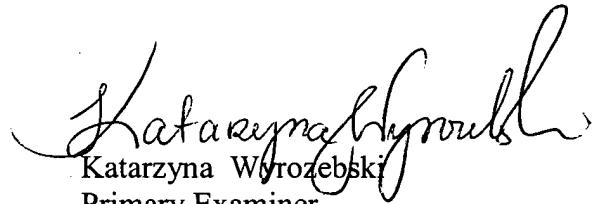
A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

5. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Katarzyna Wyrozebski whose telephone number is (571) 272-1127. The examiner can normally be reached on Mon-Thurs 6:30 AM-4:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Vasu Jagannathan can be reached on (571) 272-1119. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.



Katarzyna Wyrozebski
Primary Examiner
Art Unit 1714

February 5, 2007